

CLAIMS:

Please cancel claims 2, 3 and 8 and please replace claims 1, 4-7 and 9-12 with the following amended claims:

1. (Amended) A light-emitting thyristor matrix array formed on a chip, comprising:

$N$  ( $N$  is an integer  $\geq 2$ ) three-terminal light-emitting thyristors arrayed in one line in parallel with the long side of the chip;

a common terminal to which cathodes or anodes of the  $N$  light-emitting thyristors are connected;

$M$  ( $M$  is an integer  $\geq 2$ ) gate selecting lines; and

$\{(N/M) + M\}$  bonding pads arrayed in one line in parallel with the long side of the chip,

wherein the gate of  $k$ th light-emitting thyristor is connected to  $i$ th  $[i = \{(k-1) \text{ MOD } M\} + 1]$  gate-selecting line  $G_i$ , where "MOD" in an equation means modulo division,

the anode or cathode which is not connected to the common terminal of the  $k$ th light-emitting thyristor is connected to  $j$ th  $[j = \{(k-1)/M\} + 1]$  anode terminal  $A_j$  or cathode terminal  $K_j$ , and

the number  $M$  of the gate-selecting lines is selected so as to satisfy the expression of  $L/\{(N/M) + M\} > p$  ( $L$  is a length of the long side of the chip and  $p$  is a critical value of the array pitch of the bonding pads) in order to decrease the area of the chip.

4. (Amended) The light-emitting thyristor matrix array of claim 1, wherein the critical value  $p$  of the array pitch of the bonding pads is about  $75 \mu\text{m}$ .

5. (Amended) The light-emitting thyristor matrix array of claim 1, wherein when a prime factor for  $N$  is 2 only, the number  $M$  of the gate-selecting

3 lines is positive and is the smallest integer, next smaller integer, or third smaller integer  
4 that satisfies the expression  $L/\{(N/M) + M\} > p$ .

1 6. (Amended) The light-emitting thyristor matrix array of claim  
2 1, wherein when prime factors for N are 2 and 3 only, the number M of the gate-  
3 selecting lines is positive and is the smallest integer, next smaller integer, third smaller  
4 integer, fourth smaller integer, or fifth smaller integer that satisfies the expression  
5  $L/\{(N/M) + M\} > p$ .

1 7. (Amended) A light-emitting thyristor matrix array formed on a  
2 chip, comprising:

3 N (N is an integer  $\geq 2$ ) three-terminal light-emitting thyristors arrayed in  
4 one line in parallel with the long side of the chip;

5 a common terminal to which cathodes or anodes of the N light-emitting  
6 thyristors are connected;

7 M (M is an integer  $\geq 2$ ) anode-selecting lines or cathode-selecting lines;  
8 and

9  $\{(N/M) + M\}$  bonding pads arrayed in one line in parallel with the long  
10 side of the chip,

11 wherein the anode or cathode of kth light-emitting thyristor is connected  
12 to ith  $[i = \{(k-1) \text{ MOD } M\} + 1]$  anode-selecting line A<sub>i</sub> or cathode-selecting line K<sub>i</sub>,  
13 where "MOD" in an equation means modulo division,

14 the gate of the kth light-emitting thyristor is connected to jth  $[j = \{(k-$   
15  $i)/M\} + 1]$  gate terminal G<sub>j</sub> and

16 the number M of the anode-selecting lines or cathode-selecting lines is  
17 selected to satisfy the expression of  $L/\{(N/M) + M\} > p$  (L is a length of the long side of  
18 the chip and p is a critical value of array pitch of the bonding pads) in order to decrease  
19 the area of the chip.

Claim 8 has been canceled.

1 9. (Amended) The light-emitting thyristor matrix array of claim  
2 7, wherein the critical value  $p$  of the array pitch of the ~~bonding pads~~ is about  $75\text{ }\mu\text{m}$ .

1 10. (Amended) The light-emitting thyristor matrix array of claim  
2 7, wherein when a prime factor for  $N$  is 2 only,  $M$  is positive and is the smallest  
3 integer, next smaller integer, or third smaller integer that satisfies the expression  
4  $L/\{(N/M)+M\} > p$ .

1 11. (Amended) The light-emitting thyristor matrix array of claim  
2 7, wherein when prime factors for  $N$  are 2 and 3 only,  $M$  is positive and is the smallest  
3 integer, next smaller integer, third smaller integer, fourth smaller integer, or fifth  
4 smaller integer that satisfies the expression  $L/\{(N/M)+M\} > p$ .

1 12. (Amended) A driver circuit for driving the light-emitting  
2 thyristor matrix array according to any one of claims 1, 4, 5, and 6, comprising:

3 a circuit for driving the gate-selecting lines; and

4 a circuit for driving the anode terminals or cathodes terminal;

5 wherein the circuit for driving the gate-selecting lines including an even number of  
6 gate-selecting signal output terminals and a circuit for outputting a "selecting" signal to  
7 one of the gate-selecting signal output terminals and "no-selecting" signal to the others  
8 of the gate-selecting signal output terminals, with the terminal to which the "selecting"  
9 signal is supplied being switched in turn.

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